

6 July 2015

Registrar
National Electric Power Regulatory Authority ("NEPRA")
NEPRA Tower, Attaturk Avenue (East) Sector G-5/1,
Islamabad

Dear Sir

Subject: Master Wind Energy Limited ("Company") - Application for Modification of the Generation License

The Company was granted Generation License No. WPGL/15/2011 on the 26 December, 2011 (the "Generation License") by NEPRA, under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997, for its wind power generation facility at Jhimpir, Taluka & District Thatta, Sindh (the "Project").

As you are already aware, the Project is being designed with a capacity of 49.5 MW based on 33 Wind Turbine Generators ("WTG") of GE model 1.5 XLE. At this initial stage the overall Project design can be seamlessly modified such that there would be 33 x GE 1.6 XLE turbines (as opposed to GE 1.5 XLE) thereby increasing the overall Project capacity to 52.8 MW.

The Company, pursuant to Regulation 10(2) of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999, hereby seeks to apply for a modification of the Generation License granted to the Company to cater for the increase in the overall Project capacity to 52.8 MW.

In relation hereto, we certify that the documents-in-support attached with this modification application are prepared and submitted in conformity with the provisions of Regulation 10(2) of the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, and we undertake to abide by the terms and provisions of the above-said regulations. We further undertake and confirm that the information provided in the attached documents-in-support is true and correct to the best of our knowledge and belief.

A BANK DRAFT in the sum of applicable fee, being the modification of application fee calculated in accordance with Schedule II to the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999 is also attached herewith.

Sincerely,


Shahzad Malik, Director

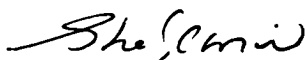
ANNEX "A"

EXTRACT OF RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF MASTER WIND ENERGY LIMITED IN THE MEETING HELD AT 82.C-1 GULBERG III, LAHORE, PAKISTAN OF THE COMPANY ON 12 JUNE 2015.

RESOLVED, that the Company may file applications for modification in the Generation License no WPGL/15/2011 on the 26 December, 2011 granted to the Company.

FURTHER RESOLVED, that Shahzad Malik, Director, is authorized to sign the necessary documentation, pay the necessary filing fees, appear before the Authority as needed, and do all acts necessary or incidental for completion and/or processing of these applications.

Certified that the above resolution (i) was duly passed on 12 June 2015 at 82-C-1 Gulberg III, Lahore in a meeting of the Board of Directors of Master Wind Energy Limited at which a quorum of directors was present; and (ii) has not been rescinded and is in operation and that this is a true copy of the said resolution.


Signature
Shahzad Malik, Director

ANNEX 1

Text of the Proposed Modification:

The Company has been informed by General Electric, the supplier of the Wind Turbine Generators, that due to software upgrades, the overall Project design can be updated and developed with an inherent flexibility to seamlessly change the Wind Turbine Generators model from 33 x 1.5 XLE to 33 x GE 1.6 XLE turbines (the "**Capacity Enhancement**"). Hence the proposed modification will change the Wind Turbine type, make and model from 1.5 XLE to 1.6 XLE and since the Company has procured 33 of these wind turbines, this will result in an overall increase in the Installed Capacity of the Wind Farm from 49.5 MW to 52.8 MW.

In relation hereto, please find attached the modifications in Schedule 1 of the Generation License attached herewith as Annex 2 and modifications in Schedule 2 of the Generation License attached herewith as Annex 3.

ANNEX 2

MODIFICATIONS IN SCHEDULE 1 OF THE GENERATION LICENSE

Pursuant to the Capacity Enhancement the following needs to modified and incorporated:

1. Detail of Generation Facility/Wind Farm

		Stated in the Generation License	Proposed Modification
B.	Wind Farm Capacity & Configuration		
i.	Wind Turbine Type, Make & Model	GE 1.5 Xle	G.E 1.6 XLE
ii.	Installed Capacity of Wind Farm(MW)	49.5 MW	52.8 MW
iii.	Number of Wind Turbines Units/Size of each Unit (KW)	33 x 1.5 MW	33 x 1.6 MW
C.	Wind Turbine Details		
i.	Power	1,500 kW	1,600 kW
ii.	Voltage	660V	690V
iii.	Hub Height	82.5m	80m
D.	Other Details		
i.	Project Commissioning Date(Anticipated)	31 Dec 2013	5 Sep 2016

2. Power Curve GE - 1.6 XLE 1.6 MW (Tabular Form)

The Calculated Power Curve table provided in the Generation License is to be replaced with the following Calculated Power Curve table for GE 1.6 XLE 1.6 MW:

1 Calculated Power Curve 1.6-82.5 - 50 Hz and 60 Hz

Standard Atmospheric Conditions (Air Density of 1.225 kg/m³)

Rotor Diameter: 82.5 m

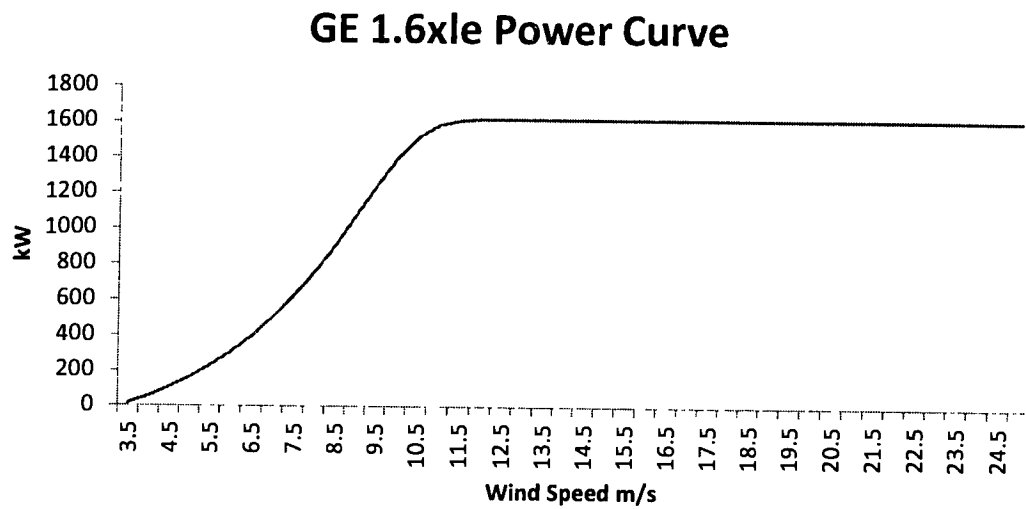
(Cut-out wind speed Based on 10 minute average)

Wind Speed at Hub Height (m/s)	Normal Turbulence Intensities 10% < TI < 15%	Low Turbulence Intensities TI < 10%	High Turbulence Intensities 15% < TI < 20%	Cp, @ Normal Turbulence Intensities
3.0	0	0	0	-
3.5	20	18	24	0.14
4.0	63	61	69	0.30
4.5	116	114	123	0.39
5.0	178	175	186	0.43
5.5	248	244	259	0.46
6.0	331	326	344	0.47
6.5	428	422	446	0.48
7.0	540	532	562	0.48
7.5	667	657	692	0.48
8.0	812	801	840	0.48
8.5	971	960	990	0.48
9.0	1136	1132	1160	0.48
9.5	1289	1297	1274	0.46
10.0	1431	1447	1400	0.44
10.5	1530	1553	1488	0.40
11.0	1590	1607	1552	0.36
11.5	1615	1620	1593	0.32
12.0	1620	1620	1615	0.29
12.5 - cutout	1620	1620	1620	-

Table 1: Calculated power curve for the 1.6 MW

3. Power Curve With Graphic GE - 1.6 XLE 1.6 MW

The diagram attached in the Generation License is to be replaced with the following Power Curve diagram of GE - 1.6 XLE 1.6 MW:



ANNEX "C"

STATEMENT OF REASONS IN SUPPORT OF THE PROPOSED MODIFICATION

The Project is currently under the construction phase and is being designed with a capacity of 49.5 MW based on 33 WTGs of GE model L5 XLE. At this initial stage, we have been informed by GE, the supplier of the WTGs, that due to software upgrades, the overall Project design can be updated and developed with an inherent flexibility to seamlessly change the WTG model from 33 x 1.5 XLE to 33 x GE 1.6 XLE turbines and increase the overall Project capacity to 52.8 MW (the "**Capacity Enhancement**"). A copy of a letter from GE to this effect is appended herewith as **Schedule 1**.

The Company has engaged with all stakeholders in this Project including National Transmission and Despatch Company/Central Power Purchasing Agency ("**NTDC/CPPA**"), the Purchaser under the Energy Purchase Agreement of the Company. Letters sent by the Company to NTDC/CPPA requesting confirmation that the planned interconnection scheme and transmission network will be sufficient to evacuate the additional 3.3 MW are attached herewith as **Schedule 2**.

Please note that the Capacity Enhancement enables the Company to operate the Project at its maximum available capacity thereby making the plant more efficient. The Regulation of Generation Transmission and Distribution of Electric Power Act, 1997 (the "**NEPRA Act**") provides that *"in performing its functions under this Act, the Authority shall, as far as practicable, protect the interests of consumers and companies providing electric power services in accordance with guidelines, not inconsistent with the provisions of this Act, laid down by the Federal Government"*¹ and in relation to tariffs, shall also *"encourage efficiency in licensees operations and quality of service."*²

In view of the on-going energy crisis in the country, we also believe that proceeding with the Capacity Enhancement is mutually beneficial for all stakeholders, including the consumers who will benefit from the additional electricity generated. In light hereof, we would request to proceed in accepting our application for the modification of the Generation License.

¹ Section 7(6) of the NEPRA Act

² Section 31 (2) (c) of the NEPRA Act

ANNEX "D"

**STATEMENT OF THE IMPACT ON THE TARIFF, QUALITY OF SERVICE AND THE
PERFORMANCE BY
THE LICENSEE OF ITS OBLIGATIONS UNDER THE LICENSE**

For the purpose of providing an upfront tariff for wind power plants, NEPRA passed the Determination of National Electric Power Regulatory Authority in the Matter of Upfront Tariff for Wind Power Generation, No. *NEPRA/TRF-WPT/2013/3942-3944*, dated April 24, 2013, as further amended pursuant to the Decision of the National Electric Power Regulatory Authority in the matter of Review of Determination of Upfront Tariff for Wind Power Generation No. *NEPRA/TRF-WPT/2013/4445-4447*, May 2, 2014 (the two determinations are collectively referred to as the "**Wind FIT**"). The Company opted for the Wind FIT on August 20, 2013 and the same was subsequently accepted by NEPRA pursuant to its Decision of National Electric Power Regulatory Authority in the matter of Application of Master Wind Energy Limited Opting for Upfront Tariff for Wind Power Projects No. *NEPRA/TRF-249/MWEL-2013/4059-4061* on April 23, 2014 (the "**Tariff Determination.**")

When the Company made the aforementioned application to NEPRA it was made on the basis of the 33 x 1.5 XLE WTGs. In light of the software upgrades now available, the Company can avail the Capacity Enhancement to increase its overall capacity to 52.8 MW. Therefore, the Company will be subsequently also seeking to amend its Tariff Determination to reflect the increased Project capacity. However, the Company would like to take this opportunity to clarify that it is neither seeking an amendment to the terms and conditions of its Tariff Determination nor the components of the Tariff Determination but merely requesting that the same set of conditions apply to the Borrower at the increased capacity of 52.8 MW.

The Company further certifies that quality of service and the performance of the Company of its obligations under the Generation License will not be affected.

ANNEX 3

MODIFICATIONS IN SCHEDULE II OF THE GENERATION LICENSE

The table in Schedule II is to be updated as follows:

Proposed Modification License

	Details	Stated in the Generation License	Proposed Modification
1.	Total Installed Gross ISO Capacity of the Generation Facility/Wind Farm (MW/GWh)	49.50 MW	52.80 MW
2.	Total Annual Full Load Hours	2872 hours	2872.404 hours
3.	Average Wind Turbine Generator (WTG) Availability	95.90%	96%
4.	Total Gross Generation of the Generation Facility/Wind Farm (in GWh)	171.7238711 GWh	183.2 GWh
5.	Array & Miscellaneous Losses GWh	18.88962582	21.02
6.	Availability Losses GWh	6.27	7.01
7.	Balance of Plant Losses GWh	4.397041	3.5
8.	Annual Energy Generation (20 year equivalent Net AEP) GWh	142.171	151.66
9.	Net Capacity Factor	Approx. 32.79%	32.79%

Note:

All the above figures are indicative as provided by the Licensee. The Net energy available to Power Purchaser for dispatch will be determined through procedures contained in the Energy Purchase Agreement.

MWEL/NTDC/CAP-ENH/001

15 May 2015

National Transmission & Despatch Company Limited
229-WAPDA House
Lahore

Attention: General Manager, CPPA

Subject: Capacity Enhancement from 49.5 MW to 52.8 MW

Dear Sir,

We refer to Master Wind Energy Limited's (the "Company") wind power generation facility being set up at Jhimpir, District Thatta, Sindh (the "Project").

We are pleased to confirm that: (a) the Project is being designed with a capacity of 49.5 MW based on 33 WTGs of GE model 1.5 xle; and (b) at this initial stage, the overall Project design can be developed with an inherent flexibility to seamlessly change the WTG model to 33 x GE 1.6 xle turbines and increase the Project capacity to 52.8MW.

This would be made possible through upgrade of the WTG control software package during construction of the Project. **A letter confirming the same from the WTG Manufacturer GE, is attached.** Our EPC contractor would develop the Project design with appropriate reserves for required elements including design enhancements for the WTG Tower assembly and WTG foundations to withstand the additional mechanical loads; reserves in the cabling, transformers and energy evacuation system.

We hope to receive your consent in relation to the evacuation of the additional 3.3 MW at the earliest, so that we may implement this option after obtaining relevant regulatory approvals.

Sincerely

For **MASTER WIND ENERGY LIMITED**


Brig Tariq Iqbal, SI(M) Retd
Project Director

Copy to: MD, NTDC





GEIOC
Power & Water

M. Naeem Shafique
Country Executive

Level-12, Arfa Software Technology Park
346-B, Ferozepur Road
Lahore 54660, Pakistan

T +92 42 3598 9706
F +92 42 3597 2184/85

May 15, 2015
Brig Tariq Iqbal
Project Director
Master Wind Energy Limited
Lahore

Subject: CAPACITY ENHANCEMENT

Dear Sir,

We refer to Master Wind Energy Limited's (the "Company") wind power generation facility being set up at Jhimpir, District Thatta, Sindh (the "Project").

We are pleased to confirm that while the Project is being designed with a capacity of 49.5 MW based on 33 WTGs of GE 1.5xle model, there is an option at this initial design stage of the Project to change the WTG configuration to GE 1.6xle model thus increasing the Project capacity to 52.8 MW. (Power Curve and other Technical Specifications of the WTG 1.6xle model are attached for your reference)

This capacity enhancement would be made possible through upgrade of the WTG controls software during construction of the Project without any change in the WTG hardware. We understand that the Company's EPC contractor will make appropriate changes in the BOP energy evacuation system of the Project to cater for the extra 3.3MW.

Kindly confirm if you would want us to execute this design change at the soonest so that we may take necessary steps at out end.

Sincerely,

M. Naeem Shafique



NATIONAL TRANSMISSION & DESPATCH CO. LTD

General Manager (CPPA) NTDCL

No.GM/CPPA/CE-II/MT-IV/MWEL/ 2486-88

Dated: 19.05.2015

General Manager Planning Power (NTDC)
5th Floor, PIA Tower, Egerton Road,
Lahore.

Subject: Capacity Enhancement

It is submitted that M/s Master Wind Energy Limited (MWEL) intends to enhance the capacity of project from 49.5 MW to 52.8 MW. In this regard M/s MWEL has submitted a letter dated 15.05.2015 accompanied with relevant literature which is being forwarded to your office for review/comments.

DA/As above

(ENGR. MANSOOR NASIR)
CE-II (Procurement) CPPA/NTDCL

CC:

- ✓ i. Brig. Tariq Izaz, SI(M) Retd, Project Director, M/s Master Wind Energy (Private) Limited, 82-C/I, Gulberg-III, Lahore.
- ii. PA to GM (CPPA) NTDCL, 229-WAPDA House, Lahore.
 - Master File

GM(CPPA)	229-WAPDA House, Lahore, Pakistan	TEL: +92 99203515, Fax: +92 99201179	gmcppa@ntdc.com.pk
CE-II(CPPA)	6 th Floor PIA Tower Egerton Road Lahore	TEL: +92 99201489, Fax: +92 99201488	ce2cppa@gmail.com